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INSTRUCTION MANUAL

This manual describes the VPH ValuPower Half Rack Series Power Supplies. It contains information of the following:

Model VPH5-60M OV
Model VPH12-35M OV
Model VPH15-31M OV

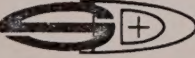
Model VPH24-22M OV
Model VPH 28-19M OV

Model VPHD15-13M OV

VPH SERIES
VALUPOWER HALF RACK POWER
SUPPLIES

MODEL NO.

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CORPORATION

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FSCM No. 52542



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January 1982

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SECTION I

DESCRIPTION

1.1 INTRODUCTION

The ValuPower Half Rack (VPH) Series Power Supplies are flexible and dependable sources of DC power, which can be used to meet a variety of needs. These needs may range in scope from inspection and production testing, to laboratory bench testing, IC and system applications.

The voltage adjustment range makes these units well suited for specific systems applications. The ability to provide power packaged in minimum space with high reliability and performance meets the demands of most systems requirements.

This instruction manual provides general characteristics and specifications, operating procedures, theory of operation, calibration and maintenance, parts lists and related schematics for the ValuPower Half Rack series Power Supplies Models, VPH5-60M OV, VPH12-35M OV, VPH15-31M OV, VPH24-22M OV, VPH28-19M OV and VPHD15-13M OV.

1.2 DESCRIPTION

The VPH Series is a unique innovation in DC power supply technology. It provides high power output with excellent regulation, low ripple, fast response and low output impedance for powering and protecting sensitive IC's and systems.

The VPH Series units are available in five slot range outputs and one dual output model (VPHD15-13M OV) providing ± 11.5 to 15.5 Vdc at 13 amps. All units are half rack, 5-1/4" high for bench or rack mounting with suitable adapters.

This series is multi-versatile for use in either multiple output power systems or in lab applications with optional meters and controls.

For multiple output power applications, the VPH Series is compatible with Trygon's RM521 and RAH-2B rack adapters. These rack configurations afford the user the opportunity to mix and match smaller units with different ratings providing a complete system power supply with multiple outputs for various power requirements.

1.3 GENERAL FEATURES

This series features UL Design, low noise for IC and Systems applications, extremely low output impedance, unique self-test output indicator lamp, adjustable current limiting, remote sensing and programming, overvoltage protection, no turn on/turn off transients, positive convection cooling and versatile rack and bench mounting capability for multiple output power. Output, sensing and remote programming terminals are located on the rear panel of the unit. The AC power switch, DC "ON" lamp, voltage control, and appropriate optional metering devices are all located on the front panel.

1.3.1 Constant Voltage Model

A constant voltage is maintained across the output terminals at any preset value within the rated slot voltage range, provided that the load does not draw more than either the rated output current or more than the preset limiting current value determined by the top recessed current control setting.

1.3.2 Automatic Foldback Current Limiting

Short circuit protection is provided by the automatic current limiting circuit which limits the maximum output current under all load conditions. The point at which automatic current limiting occurs is variable and may be selected anywhere between 40% of the rated output current and maximum rated output current of the unit. In the event of an overload, the current and voltage foldback into a safe operating region. In the event of a short circuit, the output current is limited to approximately 40% of the rated current.

1.3.3 Remote Programming

Remote Programming is provided in the voltage mode of operation and may be utilized over the entire voltage range of the unit. The scale factor for remote voltage programming is approximately 500 ohms per volt.

1.3.4 Adjustable Overvoltage Protection

Adjustable overvoltage protection (OV) has a special circuitry which prevents the output from exceeding a preset voltage. An external adjustment control recessed in the top cover is provided to vary the point at which the OV circuit will activate. The overvoltage crowbar will latch when an overvoltage condition occurs and must be reset by cycling the AC input power off and on again. The OV protection point should not be set lower than 1 volt above the minimum power supply voltage rating or 5.5 V minimum.

1.4 PRECAUTIONARY MEASURES

1.4.1 Wire Size

To assure proper regulation under all load conditions and to prevent severe distortions of the AC line voltage, it is very important to take into consideration the physical size and current handling capabilities of the input power line. Serious losses in regulation and an increase in ripple may result from underrated or overloaded AC input lines. The maximum AC impedance from the breaker box to the power supply should not exceed 0.5 ohms.

1.4.2 Terminal Post Resistance

All terminals and shorting links serving outputs, sensing and programming must be securely tightened before use. Serious loss of regulation and an increase in ripple can result due to a voltage drop caused by loose terminals and shorting links.

The specifications cited herein for regulation and ripple can be readily attained on every power supply providing the proper method of measurement is employed. The major consideration is that the highly stable meter and oscilloscope, specified in the calibration procedures, must be connected to the sensing terminals and not the load terminals. The reason for this precaution is that the voltage drop between the load terminals and sensing terminals will yield an inaccurate regulation ripple measurement.

1.5 SPECIFICATIONS

Table 1-1 is a complete list of standard specifications for the ValuPower Half Rack Power Supplies.

TABLE 1-1 SPECIFICATIONS

ELECTRICAL SPECIFICATIONS

Input:	105-132 Vac ¹ , 57-65 Hz. (200-250 Vac, 47-65 Hz option available) ² .
Output:	Floating; Isolated from ground, 300 Vdc maximum. Internal protection is provided for applied reverse voltage.
Regulation Line:	0.02% for 105-132 Vac line change.
Regulation Load:	0.02% or 5 mV* for no load to full load.
Ripple:	Less than 1 mV RMS; total ripple and noise less than 5 mV p-p +0.05%(to 10 MHz).
Stability:	0.05% +10 mV, for 8 hours after 30 minutes warm-up. Measured at constant line, load and ambient temperature.
Temperature Coefficient (Per°C):	0.02%/°C.
Temperature Range:	-20°C to +71°C.
Temperature Storage:	-55°C to +85°C.
Recovery Time:	50 microseconds to within 30 mV for a Δ 1 change as shown in the table.
High Stability (X Option):	0.03%/8 hours. 0.1%/1000 hours. TC 0.01%/°C.
Overload Protection:	A unique patented automatic non-linear current foldback system is incorporated in these units. It is adjustable from 40% to 100% of rated load and affords maximum protection of the series pass regulator while providing maximum reliability should an overload condition occur. (A minimum short circuit current of 10% will be delivered into any class of load, ensuring proper operation with most non-linear loads).

TABLE 1-1 SPECIFICATIONS (Cont'd)

ELECTRICAL SPECIFICATIONS (Cont'd)

AC Power Input Protection:	Rear panel mounted fuse.
Remote Programming:	Programmable over rated voltage range. Scale factor approximately 500 ohms/volt.
Remote Sensing:	Maintains rated regulation directly at the load. Maximum line drop 0.5 V per leg is included in voltage range. Internal protection is supplied for open sensing leads.
Voltage Adjustment Range:	Continuously adjustable over rated voltage range. Resolution and settability 0.1%.
UL Approval:	Designed to meet UL Recognized Component Index requirement.

GENERAL & PHYSICAL SPECIFICATIONS

Design Principle:	Prescision Series Pass Regulation.
Operational Modes:	Constant Voltage with Automatic Current Foldback Protection.
Controls:	
Voltage:	Continuous voltage adjustment, front panel screwdriver locking adjust.
Current:	Top recessed adjustment, 40% to 100%.
Input Power:	Front panel AC ON switch (optional) ³ .
Output Power:	Front panel DC output indicator.
OV Adjust:	Top recessed adjustment potentiometer.
Metering (Option) ³ :	
Voltage:	Front panel Voltmeter (meter accuracy $\pm 2\%$).
Current:	Front panel ammeter (meter accuracy $\pm 2\%$).
Rear Panel Power Output Terminals:	(TB-3) 1/4-20 heavy duty terminals for +V and -V.
Rear Panel Barrier Strip:	(TB-1) (1) AC; (2) Ground G; (3) AC. (TB-4) (1) Negative Output -V; (2) Negative Sensing -S; (3) Remote Voltage Programming RVP; (4) Positive Sensing +S; (5) Positive Output +V.
Systems Rack Mounting Capability:	VPH units without meters can be mounted in Rack Models RPS-8B, RAH-2B or RQH-3B racks for multiple output power are used where meter option is requested. Rack Model RM521 is used for multiple output systems applications where meters and controls are required, external to the unit.

TABLE 1-1 SPECIFICATIONS (Cont'd)

GENERAL & PHYSICAL SPECIFICATIONS (Cont'd)

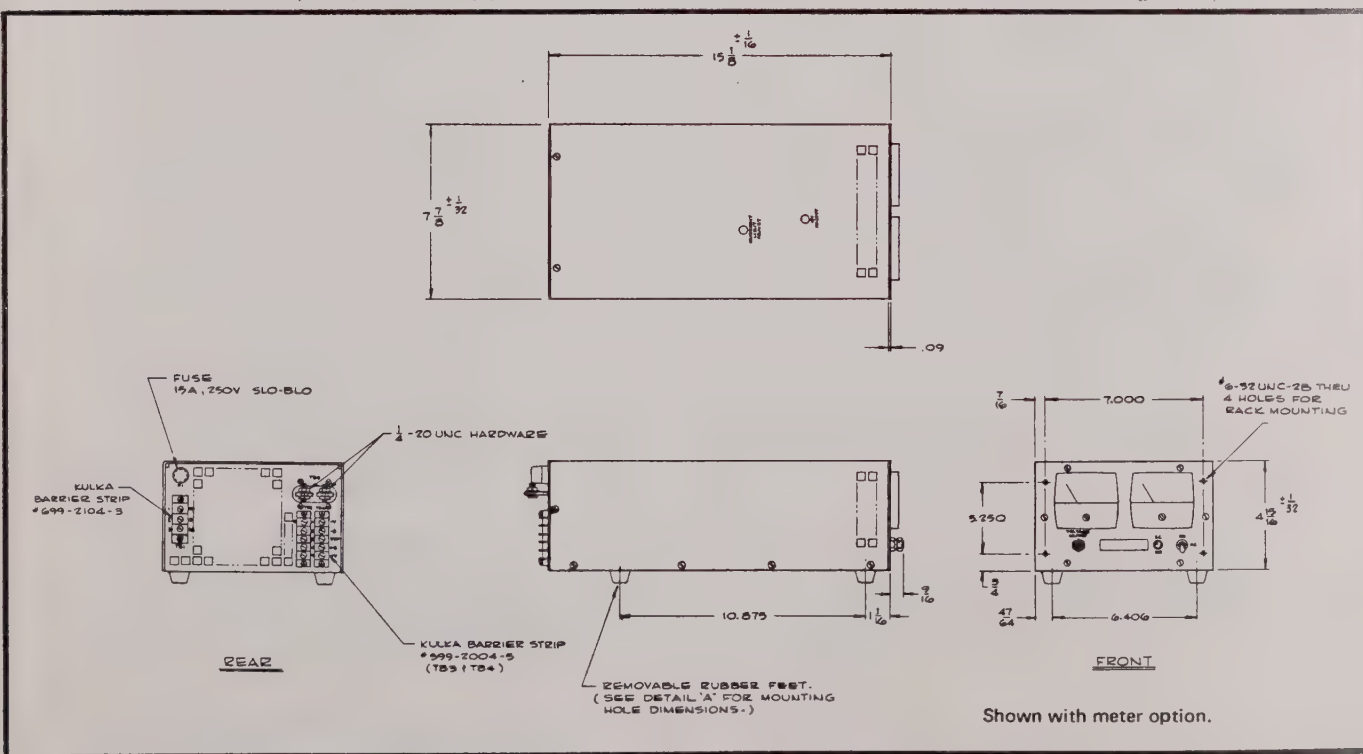
Overvoltage Protection: Automatic fast acting, adjustable over-voltage protection available with recessed adjustment.

Dimensions: 5-1/4" x 7-3/4" x 16-1/4".

Weight: 40 lbs.

NOTES: ¹Derate output current 15% for operation above 125 Vac (or 238 Vac).
²Derate current 10% or temperature 10 C. Multiply ripple by 2x factor.
³When meter option (suffix M) is ordered, unit is provided with four rubber mounting feet for bench use, AC switch and DC output indicator as well as voltage and current meters.

Model	Volts	Max. Amps at Ambient of:			Nominal AC Line Current Rms Amps	Nominal Impedance DC-1 KHz Ohms	Recovery ΔI Amps	Eff* (%)
		40°C	60°C	71°C				
VPH 5-60 OV**	4.75 to 5.5	60	45	35	8	0.0005	15	40
VPH 12-35	11.0 to 13.0	35	24	20	9	0.001	12	50
VPH 15-31	14.0 to 16.0	31	21	18	9	0.001	10	55
VPH 24-22	23.0 to 26.0	22	15	13	10	0.001	8	57
VPH 28-19	26.0 to 30.0	19	13	11	10	0.001	6	57
VPHD15-13 (Dual)	±11.5 to 15.5	13	9	7.5	7.5	0.001	4	51



INSTALLATION AND OPERATION

2.1 MECHANICAL INSTALLATION

When the ValuPower Half Rack series power supply is to be used in a rack configuration, rack adapter RAH-2B may be used for either metered or unmetered models. The RAH-2B will accommodate two VPH units side by side. Rack model RM521 can accommodate VPH units intermixed with other modules as well.

For rack mounting, the four rubber feet are removed before placing unit into the rack adapter. The rubber feet provided on all units allow the power supply to be used as a bench supply.

2.2 ELECTRICAL CONNECTIONS

Input Power

A three-terminal barrier strip mounted on the rear panel provides AC input connections to the unit.

The power handling ability of the AC power lines feeding AC power to the unit must be considered, as serious losses in regulation and substantial increase in ripple may occur as a result of insufficient power capacity of these lines. All AC power line connections must be securely tightened and any movable electric contact surface (such as the wiper arm of a variable transformer) should be kept clear of impedance producing oxide coatings.

Care should be exercised in selecting the proper wire size for the AC input lines. The AC wire size should be sufficient so that the line drop does not exceed a value which will allow the input voltage to drop below the specified lower limit of 105 VAC.

An AWG #16 should be adequate for most short runs of 20 ft. or less. Increase wire size to #14 for up to 50 feet and to #12 for up to 100 feet.

Output, Rear Panel

On single output VPH units, main output is provided on two heavy duty terminals. A second auxilliary terminal block is provided for remote sensing and remote programming.

On dual output VPHD units, the negative output, negative remote sensing and remote programming is provided on one terminal block, with positive output, positive remote sensing, and common voltage return and common remote sensing provided on a second terminal block.

2.3 OPERATING CONFIGURATIONS

The ValuPower series power supplies are designed to operate as highly regulated constant voltage sources with automatic fold-back current limiting. There are various operating configurations that can be used by proper application of shorting links

2.3 Continued

and wiring. The following paragraphs describe the various operating configurations and their connections.

Local Voltage Programming (Fig. 2-1)

To adjust the output voltage from the power supply, connect a shorting link across terminals 2 and 3. With this shorting link installed, the voltage adjust control provides adjustment of the output over the rated slot voltage range.

Remote Voltage Programming (Fig. 2-2)

Remote voltage programming is achieved by removing the shorting link from terminals 2 and 3 and substituting a resistive element of proper value across terminals 2 and 3 external to the power supply.

Sensing Connections

Local Sensing (Fig. 2-1)

Local sensing connections are made when rated regulation is not required directly at a remote load.

Connect the load to output studs +V and -V, and ascertain that shorting links are connected between terminals 1 and 2 and 4 and 5.

Remote Sensing (Fig. 2-3)

Remote sensing is used when rated regulation is required at a remote load.

Remove the shorting links between terminals 1 and 2 and 4 and 5. Using a twisted, shielded pair of wires, connect the -S (2) and +S (4) sensing terminals to the load. To prevent damage to the power supply, correct polarity of both the remote sensing and output leads must be observed. The negative remote sensing lead (-S) and negative output lead (-V) must be connected to one side of the load and the positive remote sensing lead (+S) and positive output lead (+V) connected to the other side of the load. The shield should be grounded at the power supply end of the cable.

2.4 CONTROLS

Front Panel

AC ON - switch controls power
Voltage Adjust - Potentiometer, Adjusts voltage output.

Top Cover (Recessed Controls)

Current Limit - Potentiometer adjust current limiting point
OV Adjust (option) potentiometer adjust overvoltage protection point in units having this optional feature.

VPH

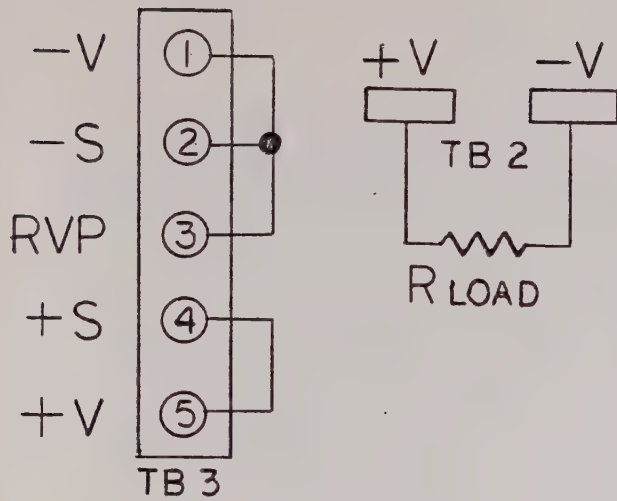
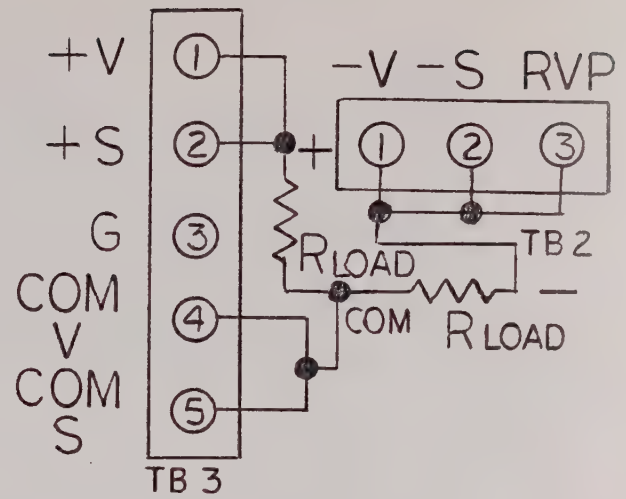
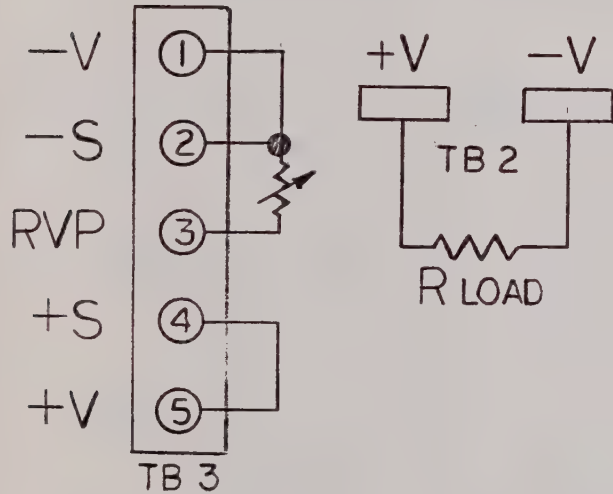


FIG 2-1 LOCAL PROGRAMMING, LOCAL SENSING

VPHD



VPH



VPHD

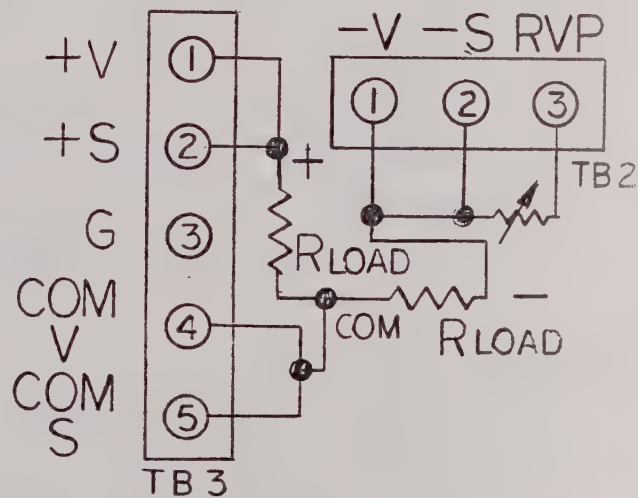
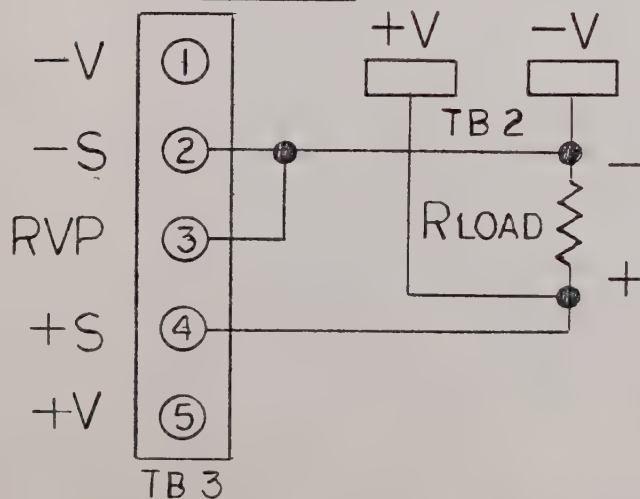


FIG 2-2 REMOTE VOLTAGE PROGRAMMING

VPH



VPHD

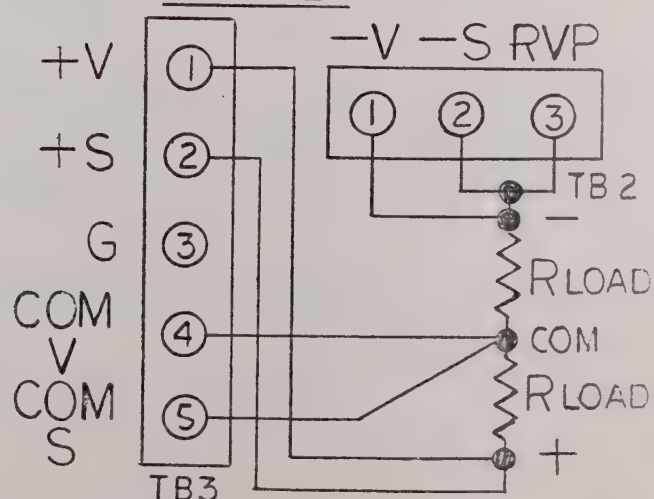


FIG 2-3 REMOTE SENSING

Internal

All internal control settings have been factory preset and require no additional adjusting. However, if it should become necessary to adjust any of the internal controls due to circuit changes caused by component aging or replacement, refer to the calibration section of this manual.

2.5 OPERATION

Control Settings

Set front panel control full CCW, top recessed controls fully CW.

Shorting Links

Prior to the application of power, connect all loads, external wiring and shorting links required for the mode of operation desired.

Grounding

Either side of the output may be grounded, or the output may be used in a floating condition.

Power On

Connect the unit to a nominal AC input power source. Set AC power switch to ON, and observe that pilot lamp is lit.

Warm-Up

No warm-up time is necessary to place the unit into operation. However, a 30 minute warm-up period is recommended to reach rated stability. The unit is now ready for operation.

THEORY OF OPERATION3.1 GENERAL

The purpose of the ValuPower series power supplies is to transform and rectify the AC input into a well regulated, stable and adjustable DC output. The following paragraphs describe the major circuits used in the power supply. As each circuit is described, reference should be made to both the Block Diagram, Figure 3-1 and the Schematic Diagram in the rear of this manual.

Primary Input

Input power is obtained through power transformer T101, diodes and filter capacitors. When power switch S101 is set to ON, the output indicator lamp DS 101 glows and AC power is applied to T101 and cooling fan B101. Regulated DC output voltage is immediately available from the power supply.

Series Regulator

The rectified voltage from the diodes and filter capacitors is directed through the Series Pass transistors. The conduction of these transistors is controlled by circuitry which causes them to act as variable resistors. Their overall resistance varies in accordance with the need of the power supply to increase or decrease its output voltage or current. The Series Pass transistors are controlled by driver stages which amplify signals from the Error Amplifier.

Reference Supply, Comparator, Error Amplifier, and Current Limiting

A single integrated circuit, A1, combined the circuitry required to perform the task usually required by many discrete components.

The stable reference voltage is generated and indicated at the circuit reference V REF. When A1 gets the zener regulated voltage across its terminals 5 and P, a precision voltage reference is developed across its terminals 4 and 5. A fixed sample of this voltage is fed into terminal 2 which is one input of the error amplifier.

The voltage which A1 compares the reference voltage to, is fed into terminal 3. Any change in the output voltage is automatically compensated for as the error amplifier generates a correction drive signal at terminal 6 which changes the output voltage accordingly.

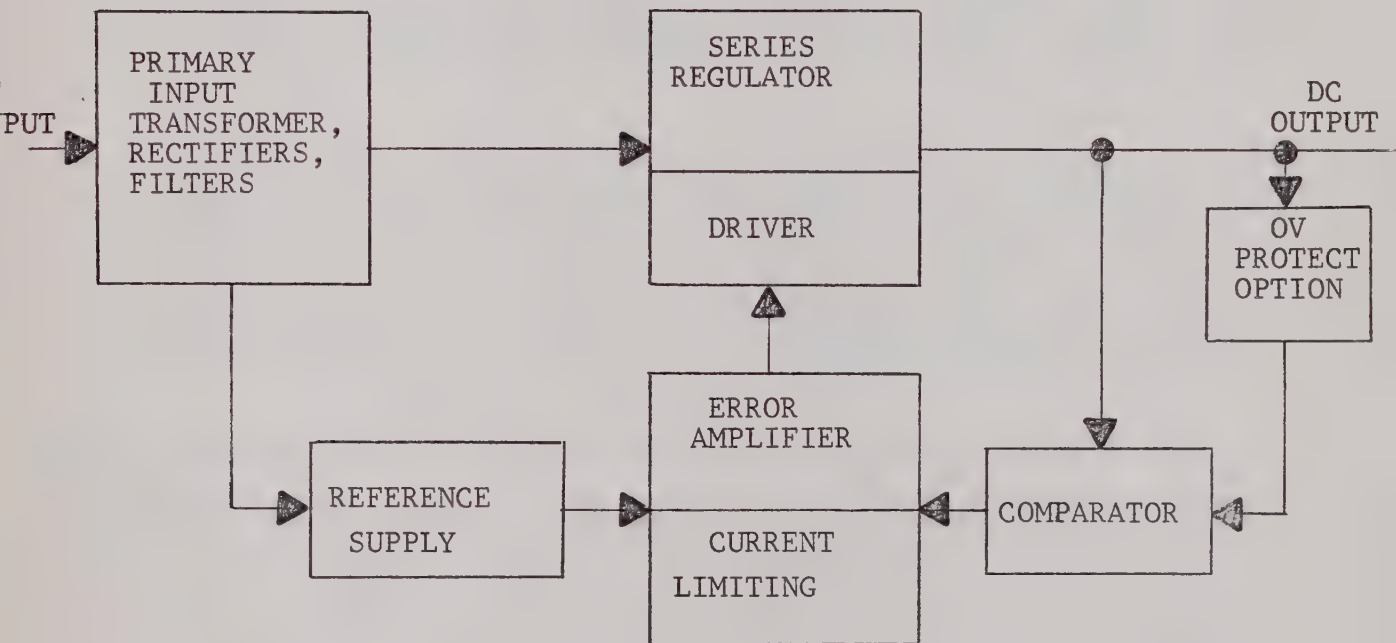
Current limiting is provided by input 10 which will control the error amplifier's output when an overcurrent condition is present.

Terminal A is a compensating input to A1, to insure stability and prevent oscillations under certain load conditions.

3.1 Continued

Overvoltage Circuit (Option)

A sample of the output voltage is developed across R21. This sample is brought to terminal 1 (anode) of the silicon unilateral switch (SUS), which has the characteristics of suddenly conducting when the applied voltage exceeds a minimum threshold. When the SUS conducts it applies a gate signal to the SCR, which crowbars the output to nominal zero.



BLOCK DIAGRAM

FIGURE 3-1

NOTE: The dual output unit uses the negative output as the Master voltage with the positive output circuitry tracking automatically.

CALIBRATION AND MAINTENANCE

4.1 GENERAL

The following adjustments should be made when necessary to assure optimum operating characteristics and maximum efficiency of the ValuPower series power supplies.

4.2 TEST EQUIPMENT REQUIRED (Or Equivalent)

1. Systron Donner Digital Multimeter Type 9025
2. External Current Shunt (150A rating)
3. Variable Auto transformer, 30 ampere rating

Shorting Link Application

For test purposes shorting links should be connected across rear panel barrier strip terminals 1 and 2, 2 and 3, 4 and 5, and 6 and 7 to provide local sensing and local voltage programming operation. To reduce pickup, shielded wire must be used for all connections between test equipment and the power supply being tested. To prevent ground loops, it is important that only one ground connection be made, as shown in Fig. 4-1. Tighten all terminals as securely as possible and set the front panel control. CW.

4.3 CALIBRATION PROCEDURE

Ammeter Calibration

1. Using a standard ammeter in series with an external load, adjust the load so the unit will operate at its maximum rated current (as indicated on the standard ammeter) and voltage output.
2. Adjust ammeter adjust control (VPH R24, VPHD R45) until ammeter M101 indicates the same current as the standard meter.

Current Limit Test

1. Establish nominal output voltage
2. Set current limit control VPH R11, VPHD R3 fully CW
3. Using an external load, apply a 20% current overload to the unit under test.
4. Adjust current limit control until the overload, as indicated on ammeter MI, is limited to between 5% and 10% (1.05 to 1.10 maximum rated current).

Constant Voltage Operation

Load Regulation Test

With the equipment connected as shown in Figure 4-1, connect a suitable load resistance across the output terminal connections. The load resistance selected must be able to dissipate the rated power of the unit ($P=IE$) and must be of sufficient value to yield the rated output current when the rated voltage is applied. Note the voltage indicated on the Digital Voltmeter. Disconnect the resistive load from the output.

The maximum change in output DC voltage should not exceed by more than .02% or 5mv (whichever is greater) that of the output voltage indicated with the load resistance applied across the output terminals.

Line Regulation Test

Place the resistive load across the output and note the voltage indicated on the DVM. Vary the AC input power 10% above and below the nominal AC input level. The maximum change in output voltage should not exceed by more than +0.02% or mv (whichever is greater) that of the output voltage measured at either extreme of the AC input.

Ripple Voltage Test

In order to reduce pickup, shielded test leads should be used in making ripple measurements. With the resistive load connected across the output terminals, measure the AC ripple with the AC scale of the DVM. Vary the AC input power 10% above and below the nominal AC input level. The maximum ripple amplitude should not exceed 1mv RMS.

Overvoltage Sensitivity (option) (See Page 4-5 for Dual Unit)

The trigger point of the OV protection circuit is determined by the setting of the OV control R21, located through the top cover. To set the OV circuit to trigger within the output range of the power supply, set R21 CW. Turn on the supply and adjust it for the desired OV firing point. Turn R21 CCW until the output voltage drops as indicated by the voltmeter.

To set the OV circuit to fire at higher output voltage than the output voltage of the supply, a second current limiting type power supply is needed. With the supply under test, set its output voltage to any value. Turn R21 CW and connect the second supply across its output terminals. Set the second supply's output voltage to the desired OV firing point. Turn R21 CCW until the output of the supply drops to a low value as indicated on the voltmeter. This indicates that the OV circuit has fired at the voltage set on the second power supply.

GENERAL

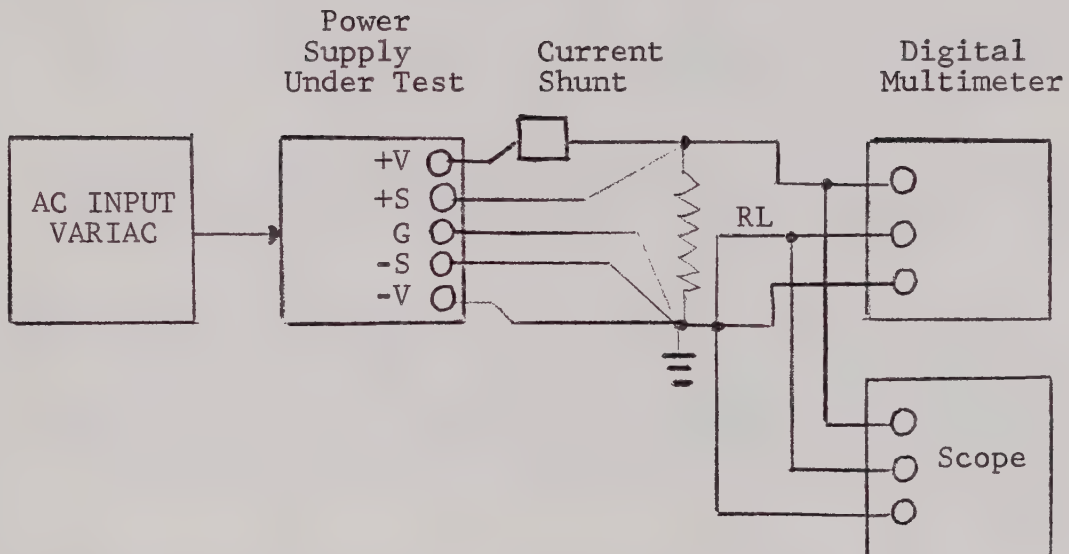
This power supply is a precision electronic instrument. It is strongly recommended that only experienced troubleshooting personnel perform troubleshooting operations or attempt to repair the unit. If the power supply appears to be malfunctioning at all, the following procedure is recommended for isolating possible defects.

Loads and Interconnections

1. Disconnect all loads and interconnections.
2. Connect a resistive load across the output terminals and operate the unit to determine whether the fault lies within the unit or externally. Observe that shorting links are in place across terminals to provide local sensing operation.
3. Set input voltage to nominal value (115 VAC) and operating controls for rated output. Satisfactory operation at this time would indicate that any malfunction previously encountered, is external in nature. All interconnections and loads normally used in conjunction with this power supply should then be carefully checked for electrical defects.

Troubleshooting

1. Set Voltage Adjust control fully CW. Use a high impedance digital voltmeter to check the voltages across the various circuit components, if shown on the Schematic Diagram located at the rear of this instruction manual. Any sample voltages listed apply only if the unit is operating at its nominal AC input, and has a dummy load of sufficient size connected across its output to allow operation at maximum rated current and voltage output levels. Any reading which is grossly incorrect, indicates that the stage being tested or the one immediately preceding it is defective. The Block Diagram, Schematic Diagram and appropriate sections of the Theory of Operation will prove helpful in any troubleshooting work. Proper polarity to be observed when testing can be easily obtained from the Schematic Diagram.
2. If voltage checks show no noticeable deviations from the prescribed values, disconnect AC power and proceed with point-to-point resistance checks across pots, switches, diodes, resistors, transistors, in that order.



CONSTANT VOLTAGE
OPERATION

TEST EQUIPMENT SET-UP

FIGURE 4-1

ADDENDUM FOR DUAL OUTPUT VPHD

VPHD OVERVOLTAGE PROTECTION

The overvoltage protection provided on the dual output VPHD is one whereby the total voltage of the plus and minus outputs is sensed. The overvoltage trip point is therefore approximately twice that of each individual supply. If either supply should go high in voltage it will cause the overvoltage crowbar to clamp both the plus and minus outputs to nominal zero volts.

The trigger point of the OV protection circuit is determined by the setting of the OV control R21, located through the top cover.

To set the OV circuit to trigger within the output voltage sum of the plus and minus voltages, set R21 CW. Turn on the supply and adjust the negative output voltage (the negative output is the master voltage with the positive output circuitry tracking automatically) for the desired OV firing point. Turn R21 CCW until the output voltage drops as indicated by the voltmeter.

To set the OV circuit to fire at a higher output voltage than the output voltages of the supply will adjust to, a second current limiting type power supply is needed.

Set the supply under test to its desired voltage with R21 turned CW. Connect the second supply across the plus and minus terminals of the supply under test and set its output voltage to the desired OV trip point. Turn R21 slowly CCW until the OV triggers as indicated by the drop in output voltage. This indicates that the OV circuit has fired at the voltage set on the second power supply.

PART NUMBER	DESCRIPTION	QUANTITY	REMARKS
1 T062100	SHIPPING ASS'Y		XX
3	SCHEMATIC	D118790	R R
5B PD25013	ASS'Y TOP COVER & LABEL		1 2
6C 065613	COVER, FINISHED		1 2
7	NAMEPLATE	T101040	1 R
8 840405	PLUG BUTTON		2 R
9 065148	AC COVER		1 2
12B PD24996	CHASSIS ASS'Y#1		1 2
13C 065608	CHASSIS		1 2
14 840192	RUBBER FEET		4 1
15 820371	CAP. 25,000 μ F-25V C105, 106		3 1
16	S/A C105 C108		R
17 820274	6000 μ F-40V C107		1 1
20 106664	FAN	B101	1 1
21 106879	CAP. CLAMP		1 1
22 100725	" "		1 1
23 065612	" "		1 2
24 T910110	GROMMET		1 R
25C 065609	BRKT, MTG-XFMR & CHOKE		1 2
26			
27			
28 T971020	1/4-20x1 1/4 HEX BOLT		2 1
29C 119112	FAN PLATE RIGHT		1 2
30C 119122	" " LEFT		1 2
31 T910010	GROMMET, 3/16		1 R
32 065614	BAFFLE		1 2
33	INSULATION-TAPE		1 R

MODEL	
PLANNED BY	
DATE	
REVIEWED BY	
DATE	
APPROVED BY	
DATE	
SHIPPING ASS'Y	
VPH 5-60	
T062100	
SHEET	1 OF 7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT CODE	ISS. QTY	SHT QTY
38B	PD25010	CHASSIS ASS'Y #2		1		2	
39	800304	CAP. 1uf-250V	C103	1		1	
40		S/A	C104			R	
41	504124	TRANSFORMER	T101	1		2	
42	710454	DIODE 1N5401	CR101, 102	2		1	
43	504125	CHOKE	L101	1		2	
44							
45B	118222	BUSS BAR POS. OUTPUT		1		2	
46C	118232	" " NEG. OUTPUT		1		2	
47B	122852	STRIP, OUTPUT HOLDING		1		2	
48B	118292	SHUNT	R117	1		2	
49	800185	CAP. .1uf-250V	C101, 102	2		1	
50							
51	100827	6-32x5/16 HEX SPACER		2		1	
52	T990450	P.C. SUPPORT		2		1	
56A	PD24995	REAR PANEL ASS'Y		1		2	
57	065611	" " FAB		1		2	
58	117377	FUSEHOLDER		1		1	
59	870212	FUSE 15A-250V	F1	1		1	
60	850150	BARRIER STRIP	TB1	1		1	
61B	118242	INSULATOR BLOCK	TB2	1		2	
62	850052	BARRIER STRIP	TB3	1		1	
63	840217	" " LINKS		3		1	
64	100827	HEX SPACERS 5/16L9		2		1	
65	116901	PLUG BUTTON		1		R	

REV DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
	52542				
	PLANNER	PREP	DATE	SYSTRON CORPORATION	
	CHK'D	SHIPPING ASS'Y			
	MAT. DLE	APPD	VPH5-60		
S/U REQ	DRAWING NO.				
	P T062100				
	SHEET 2 OF 5				

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
70A	PD25009	FRONT PANEL ASS'Y		1		2	
71C	118284	" " FINISH		1		2	
72A	06516701	METER ASS'Y 0-100A	M101	1		2	
73	065160	METER MVMT 1ma 77R		1		1	
74	117397	DIAL, BLANK	B065167	1		1	
75B	06516902	METER ASS'Y 0-8V	M102	1		2	
76B	065160	METER MVMT 1ma 77R		1		1	
77	117397	DIAL, BLANK	B065169	1		1	
78	065049	P.C. BOARD		1		2	
79	102181	POT. 1T-WW 1K	R401	1		1	
80	102278	RES. 7.5K	R402	1		1	
81	103862	HEX NUT		1		1	
82	116669	SWITCH	S101	1		1	
83	770090	LED	DS101	1		1	
84	600140	POT. V. ADJ 500-2WR116		1		1	
85	840220	SHAFT-LOCK		1		1	
86	085810	OUTPUT LABEL	PD25013	1		1	
89A	PD25173	HEAT-SINK ASS'Y #2		1		2	
90C	118982	HEAT-SINK		1		2	
91	705071	TRANSISTOR, 2N3447	Q101 Q102	2		1	
92	700196	2N4912	Q103	1		1	
93	830101	TRANSISTOR SOCKET		2		1	
94	830103	" "		1		1	
95	640020	RES. .2R-3W 10%	R101 R102	2		1	
96	101467	1K-1/2W	R103	1		1	
97	101498	100R-1/2W	R114	1		1	
98	859019	TERMINAL STRIP		1		1	
99	103358	MICA WASHER		12		R	

REVISIONS DESCRIPTION REV	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE	52542
	PLANNER	PREP	DATE	SYS-CON ☒ BY DOWNER		
		CHK'D		CORPORATE		
	MAT. USE	APPD	SHIPPING ASSY VPH 5-60			
	B/U REQ		DRAWING NO.			
	B U COMP		P 1062100			
	USED ON	SHEET 3 OF 7				

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSEMBLY QTY	ACT. QTY	ISS. QTY	SMT QTY
		HEAT-SINK ASS'Y #2 (CONT)		XX			
101	100551	MICA WASHER		1	R		
105B	PD25007	HEAT-SINK O.V. ASS'Y		1	2		
106D	T115802	HEAT-SINK FAB		1	2		
107B	065444	BRKT PC SUPPORT		2	2		
108	640190	RES. 10 Ω -2W	R115	1	1		
109	640011	.1 Ω -5W	R104-R113	10	1		
110							
111							
112	118602	BUSS BAR EMITTER		1	2		
113							
114	860270	6-32X $\frac{1}{4}$ HEX SPACER		2	1		
115	T990415	NYLON PUSH-IN NUT		3	R		
116	T990405	" " " "		2	R		
117	T990450	BRKT, P.C. SUPPORT		2	1		
118	118992	HEAT-SINK (ADDITION)		1	2		
119	T960347	RIVET		4	R		
120	700401	TRANSISTOR, 2N3771	Q104-Q113	10	1		
121							
122	720129	DIODE	CR107	1	1		
123	720132	DIODE, 1N1200A	CR108	1	1		
124	720330	" 70H10A	CR103, 104	2	1		
125	830101	TRANSISTOR SOCKET		10	1		
126	T990350	RING INSULATOR		1	R		
127	T990307	MICA WASHER		2	R		
128	T960085	SOLDER LUG		1	R		
129	880003	THERMAL SWITCH	S102	1	1		
130	720008	DIODE, SCR, 35A-50V	CR106	1	1		
131	T990340	RING INSULATOR		3	R		
132	100551	MICA WASHER		2	R		

REVISIONS DESCRIPTION REV	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREF	DATE	SYSTRON	CONNER CORPORATION
		CHK'D		SHIPPING ASSY	
	MAT. DUE	APPRO		VPH 5-60	
	B/U REQ.			DRAWING NO.	
	B/U COMP		PERIODIC	DATE	REA
			P	T062100	
	USED ON	SHEET		4	OF 7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. QTY	ISS. QTY	SHT QTY
		HEAT-SINK QV. ASS'Y (CONT.)					
34	T960640	LUG					
38C	PD25006	CONTROL BOARD ASS'Y					
39D	T112256	" " FAB					
40	102598	CAP. 100 μ f-50V	C1				
41	800090	.01 μ f-600V	C3,8				
42	800002	470pf-600V	C4				
43	810060	35 μ f-25V	C5,6				
44	100134	.05 μ f-200V	C7				
45	100178	.1 μ f-100V	C9				
46							
47	821006	68 μ f-15V	C11				
48	100063	10 μ f-25V	C12				
49	102582	200 μ f-25V	C13				
53	100413	DIODE, IN5395	CR1,2,6,7,6				
54			12,13				
55	720410	IN4741A	CR3				
56	100387	IN753A	CR4				
57	720167	IN5221B	CR5				
58	100415	IN746A	CR8				
59	741001	SCR, 2N4990	CR9				
60							
61	720440	IN4148	CR11				
65	025756	IC	A1				

DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	COOK (SERIAL)
					52542
	PLANNER	PREP	DATE	SYSTRON CORPORATION	
		CHK'D		SHIPPING ASS'Y	
		AP'D		VPH-5-60	
	MAT. DUE				
	S/U REQ.				
	S/U COMP				
	USED ON				

DRAWING NO.
 SIZE
 P T062100
 SHEET 5 OF 7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	QTY	QTY	QTY
		CONTROL BD ASS'Y (CONT)				
167	106587	TRANSISTOR, 2N2219A Q1		1	1	
169	640390	RES. 220 Ω 2W 10% R1		1	1	
170	600207	POT. 2K- $\frac{1}{2}$ W-20% R3		1	1	
171	620436	2.26K- $\frac{1}{2}$ W-1% R4		1	1	
172	620488	3.4K R5		1	1	
173	620534	4.64K R6		1	1	
174	620402	1.96K R7		1	1	
175	106012	2.2 Ω R8, 14		2	1	
176	117188	POT. 100 Ω - $\frac{1}{2}$ W R11, 16, 21, 4		1		
177		R24 R				
178	101474	330 Ω $\frac{1}{2}$ W 5% R12 R13		2	1	
179						
180	640434	400 Ω 5W 5% R15		1	1	
181	640182	7.5 Ω 10W R17 R18		2	1	
182						
183	640250	20 Ω 5W 5% R19		1	1	
184	640140	3.3 Ω 2W 10% R20		1	1	
185	101459	1.5K- $\frac{1}{2}$ W-5% R22		1	1	
186	101467	1K- $\frac{1}{2}$ W-5% R23, 29		2	1	
187	640380	150 Ω 2W 10% R25		1	1	
188	611100	2.2M- $\frac{1}{2}$ W-5% R26		1	1	
189	101511	4.7K- $\frac{1}{2}$ W-5% R27, 31		2	1	
190	101510	6.8K- $\frac{1}{2}$ W-5% R28		1	1	
191	101667	220 Ω - $\frac{1}{2}$ W-5% R30		1	1	
192	101454	2.2K- $\frac{1}{2}$ W-5% R32		1	1	

REV REVISIONS DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52642
	PLANNER	PREP	DATE	SYSTRON CORPORATION	
		CHK'D		SHIPPING ASS'Y	
	MAT. QTY	APP'D		VPH 5-60	
	B/U REQ.			DRAW NO. NO.	
	B/U COMP			— P T062100	
	USED ON			SHEET 6 OF 7	

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	QTY	QTY	QTY
199	T942306	AC-DC HARNESS		1	2		
200	PD24991	HARNESS LIST			R		
201	VPH-1	" LAYOUT			R		
203	T942416	DC CABLE		1	2		
204	PD27091	" " LIST			R		
205	VPH-2	" " LAYOUT			R		
207	PD25005	LOOSE WIRES		1	2		
211A		WIRING, TIOI & LIOI	PD25001	1	R		
212A		" REAR PANEL	PD24998	1	R		
213A		" FRONT PANEL	PD25012	1	R		
214A		" P.C. BOARD	PD25003	1	R		
215A		" HEAT-SINK	PD25174	1	R		
216B		" " "	PD25008	1	R		
217B		" CHASSIS	PD25011	1	R		

REVISIONS DESCRIPTION REV	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP	DATE	SYSTRON CORPORATION	
		CHK'D		SHIPPING ASSY VPH 5-60	
	MAT. DUE	APP'D			
	B/U REQ.			DRAWING NO.	
				REF SIZE	
	SU COMP			P 7062100	
	USED ON		SHEET	7	OF 7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SMT QTY
1	T062600	SHIPPING ASSY		X	X		
2	E	SCHEMATIC	T120060	1	R		
3	PD25368	TOP COVER & LABEL MTS		1	2		
4	065645	TOP COVER FAB		1	2		
5	065148	AC-COVER		1	2		
6	860181	ROUND SPACERS		2	1		
7	085860	LABEL		1	1		
9	PD25359	CHASSIS ASSY #1		1	2		
10	065638	CHASSIS		1	2		
11	840192	RUBBER FEET		1	1		
12	820371	CAPACITORS 25,000 μ F-25V C102, 103		4	1		
13		S/A C102 C105, 106					
14	820276	5,500 μ F-35V C107, 108		2	1		
15	106664	FAN B101		1	1		
16	100725	BRACKET CAPACITOR		2	1		
17	T900068	" " 2"		2	1		
18	065612	" "		1	2		
19	065614	BAFFLE		1	2		
20	119112	PLATE FAN BAFFLE (RH)		1	2		
21	119122	" " " (LH)		1	2		
22	065639	MTG. BKT. XFMR & CHOKE		1	2		
23		" " " ASSY PD25358		1	R		
27	PD25357	REAR PANEL ASSY		1	2		
28	065635	REAR PANEL		1	2		
29	117377	FUSE HOLDER		1	1		
30	870212	FUSE 15A 250V F1		1	1		
31	850150	BARRIER STRIP TBI		1	1		
32	800252	CAPACITOR .22 μ F-250V C109		1	1		
33							

REVISIONS DESCRIPTION CHANGE PER ECO 15157 5-20-20-R/B A	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT	
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION		
	MAT. DUE	CHK'D	SHIPPING ASSY VPHD 15-13-0V			
	B/U REQ.	APPO				
	B/U COMP	DRAWING NO.		REF SIZE	PART NO.	REV
USED ON		SHEET 1		OF 8		

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SH. QTY
34		PD25357	REAR PANEL ASSY (CONT.)			X	X	
36		850058	BARRIER STRIP	TB2	1	1		
37		850052	" "	TB3	1	1		
38		840217	" " LINKS		4	1		
39		100486	SOLDER LUG #6		1	R		
40A			REAR PANEL WIRING	PD25363	1	R		
42		PD25360	CHASSIS ASSY #2		1	R		
43		504144	TRANSFORMER		1	2		
44		065642	BUS BAR		3	2		
45		065643	" "		1	2		
49A		PD25356	FRONT PANEL ASSY		1	2		
50		119534	FRONT PANEL		1	2		
51		06517002	METER ASSY 0-20V	M101	1	R		
52		06516401	" " 0-15A	M102	1	R		
53		880611	SWITCH	S101	1	1		
54		770090	LED	DS101	1	1		
55		600230	POT V. ADJ 2.5K 2W	R111	1	1		
56		880616	SWITCH V/I	S102	1	1		
59		PD25354	HEATSINK ASSY #1		1	2		
60		065641	HEATSINK		1	2		
61		065464	BRACKET, PC SUPPORT		3	2		
63		T960347	POP RIVET		6	R		
64		T990415	NYLON-PUSH IN NUT		3	R		
65		PD25355	HEAT-SINK ASSY #2		1	R		
66		T990450	P.C. SUPPORT		5	1		

REVISIONS DESCRIPTION REV	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT	
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION		
	MAT. DUE	CHK'D	SHIPPING ASSY YPHD15-13-0V			
	B/U REQ.	APP'D				
	B/U COMP	DRAWING NO.		REF SIZE PART NO.		
USED ON		SHEET 2		OF 8		

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. QTY	ISS. QTY	SHT QTY
67		HEAT-SINK ASSY #1 (CONT)					
		#6 STAND-OFF		6	1		
70	700401	TRANSISTOR 2N3771	Q101-Q110	10	1		
71	830101	TRANSISTOR SOCKETS		10	1		
72	T990290	MICA-WASHER		5	R		
73	720132	DIODE 1N1200A-1	CR104+105	2	1		
74	T990350	RING, INSULATOR		2	R		
75	T990307	MICA-WASHER		4	R		
76	T960085	SOLDER, LUG		2	R		
77	720010	DIODE-SCR C35F	CR109	1	1		
78	T990340	RING, INSULATOR		3	R		
79	T990295	MICA-WASHER		2	R		
80	T960640	LUG		1	1		
81	720129	DIODE - 1N1199A-1	CR107+108	2	1		
82	880003	SWITCH THERMAL	S103	1	1		
83	860020	#4 STAND OFF		1	1		
84	640020	RESISTOR .2 1/2 3W	R101-R110	10	1		
85	710454	DIODE 1N5401	CR103, 106	2	1		
86	860285	CAPACITOR .47uf-250V	C104	1	1		
90	FD25469	DIODE BKT ASSY		1	2		
91	120582	DIODE BKT		1	2		
92	720132	DIODE 1N1200A-1	CR101-102	2	1		
93	800285	CAPACITOR .47uf-250V	C101	1	1		
94	T960085	LUG		2	R		
95	T990307	MICA-WASHER		4	R		
96	T990350	INSUL. RING NYLON		2	R		
97	T990306	FLAT-WASHER		2	R		
98	T990170	LOCK-WASHER		2	R		
99	T980101	HEX-NUT		2	R		

REVISIONS DESCRIPTION REV	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
	MAT. DUE	CHK'D	SHIPPING ASSY VPHD 15-13 OV		
		APP'D			
	B/U REQ.		DRAWING NO.		
			REF SIZE	PART NO.	REV
	B/U COMP		- P T062600		
	USED ON	SHEET 3 OF 8			

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SH. QTY
100			CHASSIS WIRING	FD25365	1	R		
101			" REAR "	FD25363	1	R		
104		T942344	AC/DC HARNESS		1	2		
105		FD25352	AC/DC " LIST		1	R		
107			HARNESS LAYOUT	VPHD-1	1	R		
108		T942A26	DC HARNESS		1	2		
109		FD27202	DC " LIST		1	R		
110			HARNESS LAYOUT	VPHD-2	1	R		
112		FD25366	JUMPER LIST		1	2		
118		FD25351	COMPONENT BD-ASSY		1	2		
101		119986	COMPONENT-BOARD		1	2		
102		T960665	EYELET		4	1		
103		T960A64	TERMINAL		10	1		
104		543131	— " —		24	1		
106		741002	I.C. - μ A723C	A1 A2	2	1		
108		810132	CAPACITOR 100 μ F 50V	C1	1	1		
109		800090	.01 μ F 600V	C2	1	1		
110		800168	.05 μ F 200V	C5	1	1		
111		800176	.1 μ F 100V	C6	2	1		
112		810060	35 μ F 25V	C7	5	1		
113			S/A C6	C8				

REVISIONS DESCRIPTION REV	MODEL		JOB NO.	LOT QTY	LOT NO.	CODE IDENT
						52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION		
	MAT. DUE	CHK'D	APP'D	SHIPPING ASSY VPHD15-13-0V		
	B/U REQ.			DRAWING NO.		
	B/U COMP		REF SIZE	PART NO.	RE	
		USED ON	SHEET 4	OF 8		

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHI. QTY
116		COMPONENT BD-ASSY (CONT.)					
118	800055	CAPACITOR .0068 μ F, 600V	C10	1	1		
119		S/A C7	C11				
120			C12				
121			C13				
122			C14				
123	821023	15 μ F 20V	C15	2	1		
124		S/A C15	C16				
125	800254	.22 μ F 400V	C17	1	1		
126	106489	.022 μ F 250V	C18	1	1		
129	100413	DIODE 1N5395	CR1	6	1		
130		S/A CR1	CR2				
131	720419	1N4747A	CR3	1	1		
132	720440	1N4148	CR4	5	1		
133	100378	1N751A	CR5	4	1		
134		S/A CR4	CR6				
135		" "	CR7				
136	100425	1N4739A	CR8	1	1		
137		S/A CR5	CR9				
138	741001	2N4990	CR10	1	1		
139		S/A CR1	CR11				
140	100383	1N965B	CR12	1	1		
141		S/A CR4	CR13				
142		CR5					
143		CR4					
144		CR5					
145		CR1					
146		CR1					
147		CR1					

MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
				52542
PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
	CHK'D		SHIPPING ASSY VPHD15-13-0V	
MAT. DUE	APP'D			
B/U REQ.			DRAWING NO.	
			REF. SIZE	PART NO.
B/U COMP			P	T062600
	USED ON	SHEET	5	OF 8

ITEM NO	PART NUMBER	DESCRIPTION	REFERENCE NO	ASSY QTY	ACT. CODE	ISS. QTY	ISS. CODE
149		COMPONENT BD - ASSY (CONT.)					
151	705071	TRANSISTOR 2N3447	Q1	2	1		
152	705067	2N2905A	Q2	2	1		
153		S/A Q1	Q3				
154		S/A Q2	Q4				
155	103856	HEAT SINK		2	1		
156	6A0500	RESISTOR 1K 2W 10% R1		1	1		
157	600046	POT 100 Ω 1/2W 20% R2		7	1		
158		S/A R2	R3				
159	620360	1.5K 1/2W 1% R4		2	1		
160	620300	1K 1/2W 1% R5		2	1		
161	101539	470 Ω 1/2W 5% R7		5	1		
162	101667	220 Ω 1/2W 5% R8		2	1		
163	101498	100 Ω 1/2W 5% R9		3	1		
164	101467	1K Ω 1/2W 5% R10		3	1		
165	101471	10K Ω 1/2W 5% R11		1	1		
166		S/A R10	R12				
167		S/A R2	R13				
168		S/A R15	R14				
169	620402	1.96K 1/2W 1% R15		2	1		
170	6A0400	250 Ω 10W R16		2	1		
171		S/A R16	R17				
172	6A0510	1K 5W 5% R18		1	1		
173	101527	150 Ω 1/2W 5% R19		1	1		
174	101459	1.5K 1/2W 5% R20		1	1		
175	600133	POT 500 Ω 1/2W 20% R21		1	1		
176		S/A R10	R22				
177		R7	R23				
178		R7	R24				
179		R7	R25				
180		R2	R26				

REV	MODEL	JOB NO	LOT QTY	LOT NO	CODE 100
	PLANNER	PREF	DATE	SYSTEM 	DONNER
	MAT. DUE	CHK D	CORPORATION		
	B/U REQ.	APPO	SHIPPING ASSY		
	B/U COMP	REF SIZE	PART NO.		
	USED ON	SHEET	6	OF	8

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
182			COMPONENT BD. ASSY (CONT.)					
184			RESISTOR S/A R2	R27				
185			" R4	R28				
186			" R5	R29				
187	101454		2.2K 1/2W 5%	R30	2	1		
188	640528		1.8K-2W	R31	1	1		
189	101504		680K-1/2W 5%	R32	2	1		
190	600207		POT 2K-1/2W 20%	R33	1	1		
191	620436		2.26K-1/2W 1%	R34	1	1		
192	620593		6.65K-1/2W 1%	R35	1	1		
193			S/A R9	R36				
194			R8	R37				
195			R30	R38				
196			R9	R39				
197			R7	R40				
198	620519		4.42K 1/2W 1%	R41	1	1		
199	620434		2.1K 1/2W 1%	R42	1	1		
200	068761		SHUNT 15A	R43	2	2		
201			S/A R2	R44				
202			R2	R45				
203			R43	R46				
204			R32	R47				
209			WIRING T101	PD25361	R	-		
210			P.C. BOARD	PD25367	R	-		
211			FRONT PANEL	PD25362	R	-		
212			DIODE	PD25469	R	-		
213			HEATSINK OV	PD25364	R	-		

REVISIONS DESCRIPTION REV	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
		CHK'D		SHIPPING ASSY VPHD15-13-OV	
	MAT. DUE	APP'D			
	B/U REQ.			DRAWING NO.	
B/U COMP			REF SIZE	PART NO.	REV
			- P	TO62600	
	USED ON	SHEET	7	OF	8

DESCRIPTION		MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
						52542
		PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
			CHK'D		SHIPPING ASSY VPH 28-19MOV	
		MAT. DUE	APPO			
		B/U REQ.			DRAWING NO.	
					REF. SIZE	PART NO.
		B/U COMP			— P T062500 D	
			USED ON	SHEET	1	OF 7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY. QTY	ACT. QTY	ISS. QTY	SHT QTY
38B	PD25034	CHASSIS ASS'Y #2		1	2		
39	800304	CAP. 1 μ f-250V	C103	2	1		
40		S/A C103	C104		R		
41	504126	TRANSFORMER	T101	1	2		
42	710454	DIODE 1N5401	CR101, 102	2	1		
43	504127	CHOKE	L101	1	2		
44							
45B	118222	BUSS BAR POS. OUTPUT		1	2		
46C	118232	" " NEG. OUTPUT		1	2		
47B	122852	STRIP, OUTPUT HOLDING		1	2		
48B	118392	SHUNT	R117	1	2		
49	800185	CAP. .1 μ f-250V	C101, 102	2	1		
50	800252	.22 μ f-250V	C109, 110	2	1		
51	100827	6-32x5/16 HEX SPACER		2	1		
52	T990450	P.C. SUPPORT		2	1		
56A	PD25019	REAR PANEL ASS'Y.		1	2		
57	065611	" "		1	2		
58	1117377	FUSEHOLDER		1	1		
59	870212	FUSE 15A-250V	F1	1	1		
60	850150	BARRIER STRIP	TB1	1	1		
61B	118242	INSULATOR BLOCK	TB2	1	2		
62	850052	BARRIER STRIP	TB3	1	1		
63	840217	" " LINKS		3	1		
64	100827	HEX SPACERS 5/16 Lg		2	1		
65	116901	PLUG BUTTON		1	R		

MODEL	JOB NO.	LOT QTY	LOT NO.	CODE (OE)
				52542
PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
	CHK'D		SHIPPING ASS'Y VPH 28-19MOV	
MAT. DUE	APP'D			
B/U REQ.			DRAWING NO.	
			REF. SIZE. PART NO.	
B/U COMP			— P T062500	
	USED ON	SHEET	2	OF 7

REVISED DESCRIPTION

NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SP. QTY
70A	PD25033	FRONT PANEL ASS'Y		1		2	
71C	118284	" " FINISH		1		2	
72A	06516501	METER ASS'Y 0-30A	M101	1		2	
73	065160	METER MVMT 1ma 77R		1		1	
74	117397	DIAL, BLANK	B-065165	1		1	
75B	06517102	METER ASS'Y 0-40V	M102	1		2	
76B	065160	METER MVMT 1ma 77R		1		1	
77	117397	DIAL, BLANK	B-065171	1		1	
78	065049	P.C. BOARD		1		2	
79	102473	POT. 5 K	R401	1		1	
80	102145	RES. 37.4K	R402	1		1	
81	103862	HEX NUT		1		1	
82	116669	SWITCH	S101	1		1	
83	770090	LED	DS101	1		1	
84	600230	POT. V ADJ. 2.5K-2W	R116	1		1	
85	840220	SHAFT-LOCK		1		1	

89A	PD25176	HEAT-SINK ASS'Y#2		1		2	
90C	118982	HEAT-SINK		1		2	
91	700085	TRANSISTOR, 2N3442	Q101	1		1	
92	102738	2N3738	Q103	1		1	
93	830101	TRANSISTOR SOCKET		1		1	
94	830103	" "		1		1	
95	640069	RES. .47 Ω -2W	R101	1		1	
96	101467	1K- $\frac{1}{2}$ W	R103	1		1	
97	101498	100 Ω - $\frac{1}{2}$ W	R114	1		1	
98	859019	TERMINAL STRIP		1		1	
99	103358	MICA WASHER		1		R	

DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
	52542				
	PLANNER	PREP	DATE	SYSTRON  OGNNER CORPORATION	
	MAT. DUE	CHK'D	APP'D	SHIPPING ASS'Y VPH 28-19 MOV	
	B/U REQ.	DRAWING NO.			
B/U COMP	REF SIZE PART NO. PE				
		— P		T062500	
		USED ON		SHEET 3 OF 7	

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. QTY	ISS. QTY	SHT QTY
		HEAT-SINK ASS'Y #2 (CONT)		XX			
101	T990295	MICA WASHER		1	R		
105B	PD25031	HEAT-SINK O.V. ASS'Y		1	2		
106D	T115802	HEAT-SINK FAB		1	2		
107B	065444	BRKT PC SUPPORT		2	2		
108	640190	RES. 10R-2W	R115	1	1		
109	630018	0.1R-5W-3%	R104, 107,	6	1		
110		S/A R104	108, 110,		R		
111		S/A R104	111, 112		R		
112	118602	BUSS BAR EMITTER		1	1		
113	100413	DIODE, IN5395	CR109	1	1		
114	860270	6-32x1/4 HEX SPACER		2	1		
115	T990415	NYLON PUSH-IN NUT		3	R		
116	T990405	" " " "		2	R		
117	T990450	BRKT, P.C. SUPPORT		2	1		
118	118992	HEAT-SINK (ADDITION)		1	2		
119	T960347	RIVET		4	R		
120	700088	TRANSISTOR, 2N6258	Q104, 107,	6	1		
121		S/A Q104	108, 110,		R		
122		S/A Q104	111, 112		R		
123	720132	DIODE, IN1200A	CR107, 108	2	1		
124	720488	IN2138/60HFG	CR103, 104	2	1		
125	830101	TRANSISTOR SOCKET		6	1		
126	T990350	RING INSULATOR		1	R		
127	T990307	MICA WASHER		2	R		
128	T960085	SOLDER LUG		1	R		
129	880003	THERMAL SWITCH	S102	1	1		
130	720008	DIODE, SCR, 35A-50V	CR106	1	1		
131	T990340	RING INSULATOR		3	R		
132	T990295	MICA WASHER		2	R		

PLANNER	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
	52542				
	PREP	DATE	SYSTRON CORPORATION		
	CHK'D	SHIPPING ASSY			
	MAT. DUE	APP'D	VPH 28-19 MOV		
	B/U REQ.	DRAWING NO.			
B/U COMP	REF SIZE	PART NO.	P T062500		

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
		HEAT-SINK O.V. ASS'Y (CONT)		~~X~~	~~X~~		
34	T960640	LUG		1	R		
88C	PD25030	CONTROL BOARD ASS'Y		1	2		
39D	T112256	" " FAB		1	2		
40	102598	CAP. 100 μ f-50V	C1	1	1		
41	800090	--- .01 μ f-600V	C3,8	2	1		
42	800002	470 μ f-600V	C4	1	1		
43	810060	35 μ f-25V	C5,6	2	1		
44	100134	.05 μ f-200V	C7	1	1		
45	100178	.1 μ f-100V	C9	1	1		
46	810006	2 μ f-50V	C10	1	1		
47	821006	68 μ f-15V	C11	1	1		
48	100063	10 μ f-25V	C12	1	1		
49	810072	50 μ f-50V	C13	1	1		
53	100413	DIODE, IN5395	CR1,2,6,7,6	1			
54		S/A CR1	12,13		R		
55	720410	IN4741A	CR3	1	1		
56	100387	IN753A	CR4	1	1		
57	100395	IN758A	CR5	1	1		
58							
59	741001	SCR, 2N4990	CR9	1	1		
60	100378	DIODE, IN751A	CR10	1	1		
61	720440	IN4148	CR11	1	1		
65	025756	IC	A1	1	1		

DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
		CHK'D		SHIPPING ASS'Y	
	MAT. QTY	APPO		VPH 28-19MOV	
	B/U REQ.			DRAWING NO.	
				REF. SIZE	
	B/U COMP			— P T062500	
REV		USED ON	SHEET	5	OF 7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
		CONTROL BD ASS'Y (CONT)		XX	XX		
67	106587	TRANSISTOR, 2N2219A	Q1	1	1		
69	640440	RES. 470 Ω -2W-10%	R1	1	1		
70	600207	POT. 2K- $\frac{1}{2}$ W-20%	R3	1	1		
71	620436	2.26K- $\frac{1}{2}$ W-1%	R4	1	1		
72	620634	13.7K	R5	1	1		
73	620534	4.64K	R6	1	1		
74	620402	1.96K	R7	1	1		
75	106012	2.2 Ω	R8, 14	2	1		
76	117188	POT. 100 Ω - $\frac{1}{2}$ W	R11, 16, 21, 4	1			
77		S/A R11	24		R		
78	101511	4.7K- $\frac{1}{2}$ W-10%	R12	1	1		
79	101471	10K- $\frac{1}{2}$ W-10%	R13	1	1		
80	630450	2.5K-3W-3%	R15	1	1		
81	640400	250 Ω -10W	R17	2	1		
82		S/A R17	R18		R		
83	640389	200 Ω -5W	R19	1	1		
84	640280	47 Ω -2W-10%	R20	1	1		
85	101459	1.5K- $\frac{1}{2}$ W-5%	R22	1	1		
86	101467	1K- $\frac{1}{2}$ W-5%	R23, 29	2	1		
87	640528	1.8K-2W-10%	R25	1	1		
88	611100	2.2M- $\frac{1}{2}$ W-5%	R26	1	1		
89	101511	4.7K- $\frac{1}{2}$ W-5%	R27, 31	2	1		
90	101510	6.8K- $\frac{1}{2}$ W-5%	R28	1	1		
91	101667	220 Ω - $\frac{1}{2}$ W-5%	R30	1	1		
92	101454	2.2K- $\frac{1}{2}$ W-5%	R32	1	1		

REVISION DESCRIPTION KEY	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
		CHK'D		SHIPPING ASS'Y VPH 28-19 OV	
	MAT. DUE	APPRO			
	B/U REQ.			DRAWING NO.	
				REF. SIZE PART NO. P3	
	B/U COMP			— P T062500	
		USED ON	SHEET	6	OF 7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
99	PD2510501	AC-DC HARNESS		1		2	
00	PD25105	HARNESS LIST				R	
01	VPH-1	" LAYOUT				R	
03	PD2709001	DC CABLE		1		2	
04	PD27090	" " LIST				R	
05	VPH-2	" " LAYOUT				R	
07	PD25028	LOOSE WIRES		1		2	
11A		WIRING, T101 & L101	PD25024	1		R	
12A		" REAR PANEL	PD25021	1		R	
13A		" FRONT PANEL	PD25036	1		R	
14A		" P.C. BOARD	PD25026	1		R	
15A		" HEAT-SINK	PD251177	1		R	
16B		" " "	PD25032	1		R	
17B		" CHASSIS	PD25035	1		R	

DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542.
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
		CHK'D		SHIPPING ASSY VPH 28-19MOV	
	MAT. DUE	APP'D			
	B/U REQ.			DRAWING NO.	
				REF SIZE	
	B/U COMP			PART NO.	
				REV	
		USED ON	SHEET	7	OF 7

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
1		T062200	SHIPPING ASS'Y, VPH ¹²⁻³⁵ _{OV}		-	2		
5E			SCHEMATIC, OV	T011879	REF	-		
9E		PD025628	ASS'Y, TOP COVER & LABEL		1	2		
10C		065613	COVER, FINISHED		1	1		
11E		065148	AC - COVER		1	2		
12		860181	ROUND SPACERS		2	1		
13			NAMEPLATE		1	R		
15		840405	PLUG BUTTON		1	R		
17B		PD025608	ASS'Y, CHASSIS #1		1	2		
18C		065608	CHASSIS, FINISHED		1	2		
19E								
21		840192	FEET, RUBBER		4	1		
22		T971020	1/4-20 x 1 1/4 HEX BOLT		2	1		
23		820334	CAPACITOR, 1200uF, 40V	C105, 106, 108	3	1		
25		820274	, 6000uF, 40V	C107	1	1		
27		106664	FAN	B101	1	1		
29		106879	CLAMP, CAPACITOR		1	1		
31		100725			1	1		
33C		065612			1	2		

REVISIONS DESCRIPTION A CHANCE PER ECO 15147 1-23-80 B CHANCE PER ECO 15158 5-20-80	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT	
	PLANNER	PREP DATE	SYSTRON  DONNER CORPORATION			
	MAT. QTY	CHK'D	SHIPPING ASS'Y			
	B/U REQ.	APP'D	VPH 12-35 OV			
	B/U COMP	USED ON	DRAWING NO. REF SIZE PART NO. REV			

REF	SIZE	PART NO.	REV
A	-	P T062200	E

FORM EB-A 11 JUL 75

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHI QTY
		PD025606	ASS'Y, CHASSIS #1		—	—		
33								
34		065609	BRKT, MTG., XFMR & CHOKE		1	2		
35		T910110	GROMMET		1	R		
36		PD025618	ASSLY, HEAT SINK #2		1	2		
37		640020	RES. .2Ω 3W	R101	1	1		
38		101467	1K 1/2W	R103	1	1		
39		101498	100Ω 1/2W	R114	1	1		
41	A							
42		118982	HEATSINK, ADDITION #1		1	2		
43		705071	TRANSISTOR	Q101	1	1		
44		700196	↓	Q103	1	1		
45		830101	SOCKET, TRANSISTOR		1	1		
46		830103	↓ ↓		1	1		
47		T990290	WASHER, MICA		1	R		
48		T990285	↓ ↓		1	R		
49		859019	STRIP, TERMINAL		1	1		
51		065614	BAFFLE		1	2		
51C		119112	PLATE, FAN, RIGHT		1	2		
52C		119122	↓ , ↓ , LEFT		1	2		
53		T950174	INSULATION, RUBBER		1	R		
54		T910010	GROMMET, 3/16		1	R		
55A		PD025627	ASS'Y, PANEL REAR		1	2		
56		065611	REAR PANEL		1	2		
57		117377	HOLDER, FUSE		1	1		
58		870212	FUSE, 15A, 250V	F1	1	1		
59		850150	STRIP, BARRIER	TB1	1	1		
60		118242	BLOCK, INSULATOR	TB2	1	2		
61		850052	STRIP, BARRIER	TB3	1	1		
62		840217	LINK, BARRIER STRIP		1	1		
63		PD025625	ASS'Y, CHASSIS #2		1	2		
64B		300304	CAP. 1μF 250V	C103 & 104	2	2		
65		504178	TRANSFORMER	T101	1	2		

REVISIONS DESCRIPTION REV	MODEL		JOB NO.	LOT QTY	LOT NO.	CODE IDENT
						52542
	PLANNER	PREP DATE	SYSTRON  DONNER CORPORATION			
		CHK'D	SHIPPING ASS'Y			
	MAT. DUE	APP'D	VPH 12-35 OV			
	B/U REQ.	DRAWING NO.				
		REF SIZE	PART NO.	REV		
	B/U COMP	— P	T062200			
		USED ON	SHEET	2	OF 5	

ITEM NO.	S-1	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
		PD02562E (CONT)	ASS'Y, CHASSIS #2		-	-		
66		710454	DIODE 1N5401	CR101#102	2	1		
67		504177	CHOKE	L101	1	2		
68B		118222	BAR, BUSS, POS. OUTPUT		1	2		
69C		118232	BAR, BUSS, NEG. OUTPUT		1	2		
70B		118292	SHUNT		1	2		
71		800185	CAP. .1 μ F 250V	C101#102	2	1		
72A		PD025624	ASS'Y, FRONT PANEL		1	2		
73C		118284	FRONT PANEL, FINISH		1	2		
74								
75		06516601	METER, 0-50 A	M101	1	R		
76		06517002	METER, 0-20V	M102	1	R		
77		880611	SWITCH	S101	1	1		
78		770090	L.E.D.	D5101	1	1		
79		600188	RESISTOR, VADJ, 1.5K 2W	R116	1	1		
80		840220	SHAFTLOCK		1	1		
81B		PD025622	ASS'Y, HEATSINK, OV		1	2		
82D		T115802	HEATSINK, FAB.		1	2		
83								
84A			ASS'Y, HEATSINK #3	PD025620	1	2		
85								
86B		065444	BRKT, P.C. SUPPORT		2	2		
87		T990450	P.C. SUPPORT		4	1		
88C		118992	H'SINK ADDITION		1	2		
89								
90C		118602	BAR, BUSS, EMITTER		1	2		
91					2	1		
92								
93								
94		T990415	NUT, PUSH, NYLON		3	R		
95								
96								
97		T990405	NUT, PUSH, NYLON		2	R		

REVISIONS DESCRIPTION REV	MODEL		JOB NO.	LOT QTY	LOT NO.	CODE IDENT
						52542
	PLANNER	PREP DATE	SYSTRON  DONNER CORPORATION			
		CHK'D	SHIPPING ASSY			
	MAT. DUE	APP'D	VPH 12-35 OV			
	B/U REQ			DRAWING NO.		
				REF SIZE	PART NO.	REV
	B/U COMP			- P	T062200	
USED ON			SHEET 3 OF 5			

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
		PD025622(40)	ASS'Y, HEATSINK, OV		-	-		
99		T960347	RIVET		4	R		
100		640190	RES. 10Ω 2W	R115	1	1		
101		705071	TRANSISTOR,	Q104-113	10	1		
102		640011	RES. .125W	R104-113	10	1		
103		720132	DIODE	CR108	1	1		
105		720129		CR107	1	1		
107		720335	1 1N1184A	CR103 & 104	2	1		
109		830101	SOCKET, TRANSISTOR		10	1		
111		T990350	RING, INSULATOR		1	R		
113		T990307	WASHER, MICA		2	R		
115		T960085	LUG, SOLDER		1	R		
117		880003	SWITCH, THERMAL	5102	1	1		
119								
121		720008	DIODE - SCR	CR106	1	1		
123		T990340	RING, INSULATOR		3	R		
125		T990295	WASHER, MICA		2	R		
127		T960640	LUG		1	R		
129								

REVISIONS DESCRIPTION REV	MODEL		JOB NO.	LOT QTY	LOT NO.	CODE IDENT
						52542
	PLANNER	PREP DATE	SYSTRON ~~INC~~ DONNER CORPORATION			
		10-23-75	SHIPPING ASS'Y			
	MAT. DUE	CHK'D	VPH 12-35 OV			
	APP'D	DRAWING NO.				
B/U REQ.		REF SIZE PART NO. REV				
		- P T062200				
B/U COMP		USED ON SHEET 4 OF 8				

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
		PD025625	(CON-) ASSY., CHASSIS #2		-	-		
131B		122852	STRIP, OUTPUT HOLDING		1	2		
133C		PD025621	ASSY., COMP. BD.		1	2		
135D		T112256	FAB., P.C.B		1	2		
137		T960464	TERMINAL		16	R		
138		543131	* RIGHT ANGLE		16	R		
141		102598	CAPACITOR, 100 μ F, 50V	C1	1	1		
143		800090	.01 μ F, 600V	C3	2	1		
144		800002	470 μ F, $\downarrow$	C4	1	1		
145		810060	35 μ F, 25V	C5	2	1		
146			S/AC5	C6				
147		100134	.05 μ F, 200V	C7	1	1		
148			S/AC3	C8				
149		100178	.1 μ F, 100V	C9	1	1		
151		821006	68 μ F, 15V	C11	1	1		
152		100063	10 μ F 25V	C12	1	1		
153		821007	68 μ F $\downarrow$	C13	1	1		
155		100413	DIODE, IN4004	CR1	2	1		
156			S/A CR1	CR2				
157		720410	IN4741 A	CR3	1	1		
158		100387	IN753 A	CR4	1	1		
159		720167	IN5221 B	CR5	1	1		
160		100413	IN4384	CR6	4	1		
161			S/A CR6	CR7				

REVISIONS DESCRIPTION REV	MODEL		JOB NO.	LOT QTY	LOT NO.	CODE IDENT
						52542
	PLANNER	PREP DATE	SYSTRON  DONNER CORPORATION			
		CHK'D	SHIPPING ASSY			
	MAT. DUE	APP'D	VPH 12-35 OV			
	B/U REQ.		DRAWING NO.			
			REF SIZE	PART NO.	REV	
	B/U COMP		- P	T062200		
		USED ON	SHEET	5	OF	8

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT. QTY
	PD025000 (CONT)	ASS'Y, COMP. B.D.		-	-		
163	100378	DIODE, IN751A	CR8	2	1		
164	741001	UN-SW 2N4990	CR9	1	1		
		S/A CR8	CR10				
166	720440	IN 4148	CR11	1	1		
167		S/A CR6	CR12				
168			CR13				
170	025756	I.C.	AI1	1	1		
172	106587	TRANSISTOR, 2N 2219A	Q1	1	1		
174	640440	RESISTOR, 470 Ω , 2W, 10%	R1	2	1		
175							
176	600207	POT, 2K, 1/2W, 20%	R3	1	1		
177	620436	2.26K, 1/2W, 1%	R4	1	1		
178	620592	6.19K,	R5	1	1		
179	620534	4.64K,	R6	1	1		
180	620402	1.96K,	R7	1	1		
181	106018	2.2 Ω , 10%	R8	2	1		
184	600046	POT, 100 Ω , 1/2W, 20%	R11	4	1		
185	101459	1.5K, 1/2W, 10%	R12	1	1		
186	101467	1K, 1/2W, 10%	R13	1	1		
187		S/A R8	R14				
188	630450	2.5K, 3W, 3%	R15	1	1		
189		S/A R11	R16				
190	640300	50 Ω , 10W	R17	2	1		
191		S/A R17	R18				
192	640290	50 Ω , W, 5%	R19	1	1		
193	640190	10 Ω , 2W	R20	1	1		

REVISIONS DESCRIPTION REV	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP DATE	SYSTRON  DONNER CORPORATION		
		10-25-75	SHIPPING ASS'Y		
	MAT. DUE	CHK'D	VPH 12-35 OV		
	APP'D	DRAWING NO.			
B/U REQ.		REF SIZE PART NO.			
		- P T062200			
B/U COMP		USED ON SHEET 6 OF 5			

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
		PD025621 (CONT)	ASS'Y, COMP. BD.		-	-		
194			RESISTOR, S/A R11	R21				
195		101459	1.5K, 1/2W, 10%	R22	1	1		
196		101469	1K, ↓ ↓	R23	2	1		
197			S/A R11	R24				
198			↓ R1	R25				
199		611100	2.2M Ω , 1/2W, 10%	R26	1	1		
200		101511	4.7K, 1/2W, 10%	R27	2	1		
201		101510	6.8K, ↓ ↓	R28	1	1		
202			S/A R23	R29				
203		101667	220 Ω , 1/2W, 10%	R30	1	1		
204			↓ S/A R27	R31				
206		840422	PAD, IC		1	R		
207		840411	↓, TRANSISTOR		1	R		
208		840420	↓, ↓		1	R		
210A			WIRING, T101 & L101	PD025613	REF	-		
212A			, REAR CHASSIS	PD025610	REF	-		
214A			, FRONT PANEL	PD025627	REF	-		
216A			, PCB	PD025615	REF	-		
218A			, HEAT SINK	PD025619	REF	-		
219B			↓	PD025623	REF	-		
220B			↓, CHASSIS	PD025626	REF	-		
					1			
					1			
					1			

REVISIONS DESCRIPTION REV	MODEL		JOB NO.	LOT QTY	LOT NO.	CODE IDENT
						52542
	PLANNER	PREP DATE	SYSTRON  DONNER CORPORATION			
		10-24-75	SHIPPING ASS'Y			
	MAT. DUE	CHK'D	VPH 12-35 OV			
	B/U REQ.	APP'D	DRAWING NO.			
			REF SIZE	PART NO.	REV	
	B/U COMP		- P	T062200		
USED ON			SHEET 7 OF 8			

ITEM NO.	S I Z E	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SH. QTY
		T062200 (CONT)	SHIPPING ASSY		-	-		
227		PD02499101	HARNESS AC/DC		1	2		
228		PD024991	WIRE LIST		1	2		
229		T960565	SPADE LUG		5	R		
230		T960560	↓		3	R		
231		PD02709001	HARNESS DC		1	2		
233		PD027090	WIRE LIST		1	2		
235		PD002502E	WIRE LIST - JUMPERS		1	2		
237		T960515	SPADE LUG		4	R		
238		T960514	↓		2	R		
239		T960160	↓		2	R		
240		T960565	↓		2	R		
*243A		06516601	METER ASSY 0-50A	M101	1	2		
244E		065160	METER MVMT 1ma 77Ω	AD106	1	1		
245		117397	DIAL, BLANK	B 065166	1	1		
*246E		06517012	METER ASSY 0-20V	M102	1	2		
247E		065160	METER MVMT 1ma 77Ω		1	1		
248		117397	DIAL, BLANK	B 065170	1	1		
249		065049	P.C. BOARD		1	1		
250		117123	POT 1T WW 2K 1%	R401	1	1	72X1	
251		117126	RES, 19.1K 1%	R402	1	1	72X1	
252		103862	HEX NUT 73734	9206	2	1		

REV REVISIONS DESCRIPTION	MODEL		JOB NO.	LOT QTY	LOT NO.	CODE IDENT
						52542
	PLANNER	PREP	DATE	SYSTRON CORPORATION		
		CHK'D		SHIPPING ASSY		
	MAT. DUE	APP'D		VPH 12-35 0V		
	B/U REQ.			DRAWING NO.		
				REF SIZE PART NO.		
	B/U COMP			- P T062200		
		USED ON	SHEET 8 OF 8			

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
1	T062400	SHIPPING ASSY		X	X		
3D		SCHEMATIC	124820	R	R		
6B	FD25205	ASSY TOP COVER & LABEL		1	2		
7C	065613	COVER, FINISHED		1	2		
8		NAMEPLATE	T101040	1	R		
9	840405	PLUG BUTTON		1	R		
10A	065148	AC COVER		1	2		
11	860181	ROUND SPACERS		2	1		
13B	FD25185	CHASSIS ASSY #1		1	2		
14C	065608	CHASSIS		1	2		
15	840192	RUBBER FEET		4	1		
16	820286	CAPACITOR 6300 μ F-75V C105	106	3	1		
17		S/A C105 C108					
18	820274	6000 μ F-40V C107		1	1		
20	106664	FAN	B101	1	1		
21	106879	CAP. CLAMP		1	1		
22	100725	" "		1	1		
23	065612	" "		1	2		
24	T910110	GROMMET		1	R		
25C	065609	BRKT, MTG., XFMR & CHOKE		1	2		
26	640530	RESISTOR 2K Ω 5W	R118	1	1		
27							
28	T971020	1/4-20 x 1/4 HEX BOLT		2	1		
29C	119112	FAN PLATE RIGHT		1	2		
30C	119122	" " LEFT		1	2		
31	T910010	GROMMET, 3/16		1	R		
32	065614	BAFFLE		1	2		

REVISIONS DESCRIPTION CHANGE PER ECO 15147 1-23-80 CHANGE PER ECO 15158 5-20-80	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT	
	PLANNER	PREP	DATE	SYSTRON	DONNER CORPORATION	
	MAT. DUE	CHK'D	APP'D	SHIPPING ASSY VPH24-22 MOV		
	B/U REQ.	DRAWING NO.				
	B/U COMP	REF SIZE	PART NO.	REV		
REV	A	B	USED ON	SHEET	CF	

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SH. QTY
34A		PD25195	HEATSINK ASSY #2		1	2		
35C		118982	HEATSINK		1	2		
36		700085	TRANSISTOR	Q101	1	1		
37		102738	" 2N3738	Q103	1	1		
38		830101	" SOCKET		1	R		
39		830103	" "		1	R		
40		640069	RESISTOR .47 Ω 2W	R101	1	1		
41		101467	" 1K Ω 1/2W	R103	1	1		
42		101498	" 100 Ω 1/2W	R114	1	1		
43		859019	TERMINAL STRIP		1	1		
44			MICA WASHER	T990290	1	R		
45			" "	T990285	1	R		

50A		PD25184	PANEL REAR ASSY		1	2		
51		117377	FUSE HOLDER		1	1		
52		870212	FUSE 15A-250V	F1	1	1		
53		850150	BARRIER STRIP	TB1	1	1		
54B		118242	INSULATOR BLOCK	TB2	1	2		
55		850052	BARRIER STRIP	TB3	1	1		
56		840217	" " LINKS		3	1		
57		065611	REAR PANEL		1	2		

603		PD25201	CHASSIS ASSY #2		1	2		
61		800304	CAP. 1 μ f - 250V	C103, 104	2	1		
62		504137	TRANSFORMER	T101	1	2		
63		710454	DIODE 1N5401	CR101, 102	2	1		
64		504127	CHOKE	L101	1	2		
65B		118222	BUS BAR POS. OUTPUT		1	2		
66C		118232	" " NEG. OUTPUT		1	2		

REV DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDE
					52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
		CHK'D		SHIPPING ASSY	
	MAT. DUE	APP'D		VPH 24-22 MOV	
	B/U REQ.			DRAWING NO.	
	B/U COMP		REF SIZE	PART NO.	
			P	T062400	
	USED ON	SHEET 2		OF 7	

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
67			CHASSIS ASSY #2 (CONT.)					
68B		122852	STRIP, OUTPUT HOLDING		1	2		
69B		118392	SHUNT		1	2		
70		800185	CAPACITOR .1 μ f 250V	C101, 102	2	1		
71		800252	" .22 μ f 250V	C109, 110	2	1		
72		T990450	P.C. SUPPORT		2	1		
73								
75A		PD25200	FRONT PANEL ASSY		1	2		
76C		118284	" " FINISH		1	2		
77A		06516501	METER ASSY 0-30A	M101	1	2		
78		065160	METER MVMT 1ma 72 Ω		1	1		
79		117397	DIAL, BLANK	B065165	1	1		
80B		06517102	METER ASSY 0-40V	M102	1	2		
81B		065160	METER MVMT 1ma 72 Ω		1	1		
82		117397	DIAL, BLANK	B065171	1	1		
83		065049	P.C. BOARD		1	1		
84		117124	POT 5K	RA01	1	1		
85		102145	RES 37.4K	RA02	1	1		
86		103862	HEX NUT		1	1		
87		880611	SWITCH	S101	1	1		
88		770090	L.E.D	DS101	1	1		
89		600220	RESISTOR V ADJ 2K2W	R116	1	1		
90		840220	SHAFTLOCK		1	1		
94B		PD25199	HEATSINK OV ASSY		1	2		
95D		TL15802	HEATSINK FAB		1	2		
96B		065444	BKT- PC SUPPORT		2	2		
97		640190	RESISTOR 10 Ω 2W	R115	1	1		
98		630018	" 0.1 Ω 5W 3%	R104, 107	6	1		
99			" S/A R104	R108, 110				
REVISIONS DESCRIPTION REV			MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT	
			PLANNER	PREP	DATE	SYSTRON	DONNER CORPORATION	52542
				CHK'D		SHIPPING ASSY		
			MAT. DUE	APP'D		VPH 24-22 MOV		
			B/U REQ.			DRAWING NO.		
			B/U COMP			REF SIZE	PART NO.	REV
						- P	TA06-2400	
						USED ON	SHEET 3	OF 7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SH. QTY
100		HEATSINK OV ASSY (CONT)					
102		RESISTOR S/A R104	R111, 112				
103C	118602	BUS BAR EMITTER		1	2		
104	100413	DIODE IN 5395	CR109	1	1		
105	T990450	P.C. SUPPORT		2	1		
106	T990415	NYLON PUSH-IN NUT		3	R		
107	T990405	" " " "		2	R		
108C	118992	HEAT-SINK (ADDITION)		1	2		
109		RIVET	T960347	4	R		
110	700088	TRANSISTOR 2N6258	Q104, 107	6	1		
111		" S/A Q104	Q108, 110				
112		" S/A Q104	Q111, 112				
113	720132	DIODE IN 1200A	CR108, 107	2	1		
114	720488	" IN 2138-60HFG	CR103, 104	2	1		
115	830101	TRANSISTOR SOCKETS		6	1		
116		RING INSULATOR	T990350	1	R		
117		MICAWASHER	T990307	2	R		
118		SOLDER LUG	T960085	1	R		
119	880003	THERMAL SWITCH	S102	1	1		
120	720008	DIODE-SCR 35A-50V	CR106	1	1		
121		RING INSULATOR	T990340	3	R		
122		MICAWASHER	T990295	2	R		
123		LUG	T960640	1	R		
125	PD25194	JUMPER LIST		1	2		
127	TA2307	HARNESS AC/DC		1	2		
128	PD25180	" LIST					
129	VPH-1	" LAYOUT					
130	TA2416	DC CABLE		1	2		
131	PD27093	" " LIST					
132	VPH-2	" LAYOUT					

REVISION DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
	MAT. DUE	CHK'D	APPRO	SHIPPING ASSY VPH24-22MOV	
	B/U REQ.			DRAWING NO.	
	B/U COMP		REF SIZE	PART NO.	REV
			- P	T062400	
	USED ON	SHEET 4 OF 7			

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
139C		PD25198	CONTROL BOARD ASSY		1		2	
140D		T112256	" " FAB		1		2	
142		102598	CAPACITOR 100 μ F 50VDC	C1	1		1	
143		800090	.01 μ F 600V	C3	2		1	
144		800002	470pF 600V	C4	1		1	
145		810060	35 μ F 25V	C5	2		1	
146			S/A C5	C6				
147		100134	.05 μ F 200V	C7	1		1	
148			S/A C3					
149		100178	.1 μ F 100V	C9	1		1	
150		810006	2 μ F 50V	C10	1		1	
151		821006	68 μ F 15V	C11	1		1	
152		100063	10 μ F 25V	C12	1		1	
153		810072	50 μ F 50V	C13	1		1	
155		100413	DIODE 1N5395	CR1	6		1	
156			S/A CR1	CR2				
157		720410	1N4741A	CR3	1		1	
158		100387	1N753A	CR4	1		1	
159		100395	1N758A	CR5	1		1	
160			S/A CR1	CR6				
161			" "	CR7				
162			NOT USED	CR8				
163		7A1001	TRIAC 2N4990	CR9	1		1	
164		100378	DIODE 1N751A	CR10	1		1	
165		720440	" 1N4148	CR11	1		1	

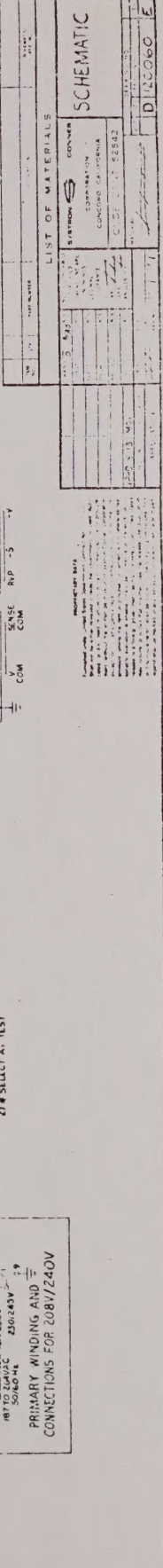
REVISIONS DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
	MAT. DUE	CHK'D	APP'D	SHIPPING ASSY VPH 24-22MOV	
	B/U REQ.			DRAWING NO.	
B/U COMP			REF SIZE	PART NO.	REV
				- P 7062400	
	USED ON	SHEET 5		OF 7	

ITEM NO.	SIZE	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	S
166		PD25198	CONTROL BD. ASSY (CONT.)					
168			DIODE S/A CR1	CR12				
169			" " "	CR13				
172		025756	IC	A1	1	1		
174		106587	TRANSISTOR 2N2219A Q1		1	1		
176		6A0440	RESISTOR 470 Ω 2W 10%	R1	1	1		
177		600207	POT 2K 1/2W 20%	R3	1	1		
178		620436	2.26K 1/2W 1%	RA	1	1		
179		102201	12.4K	R5	1	1		
180		620534	4.64K	R6	1	1		
181		620402	1.96K	R7	1	1		
182		106012	2.2 Ω	R8	2	1		
183		117188	POT 100 Ω 1/2W	R11	4	1		
184		101432	3.3K 1/2W 5%	R12	1	1		
185		101511	4.7K 1/2W 5%	R13	1	1		
186			S/A R8	R14				
187		630450	2.5K 3W 3%	R15	1	1		
188			S/A R11	R16				
189		6A0400	250 Ω 10W	R17	2	1		
190			S/A R17	R18				
191		6A0389	200 Ω 5W	R19	1	1		
192		6A0280	47 Ω 2W 10%	R20	1	1		
193			S/A R11	R21				
194		101459	1.5K 1/2W 5%	R22	1	1		
195		101467	1K 1/2W 5%	R23	2	1		
196			S/A R11	R24				
197		6A0500	1K 2W 10%	R25	1	1		
198		611100	2.2MEG 1/2W 10%	R26	1	1		

REVISIONS DESCRIPTION REV	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
	MAT. DUE	CHK'D	APP'D	SHIPPING ASSY	
	B/U REQ.			VPH 24-22 MO V	
	B/U COMP			DRAWING NO.	
			REF SIZE	PART NO.	REV
			P	T062400	
	USEC ON	SHEET	6	OF	7

ITEM NO.	PART NUMBER	DESCRIPTION	REFERENCE NO.	ASSY QTY	ACT. CODE	ISS. QTY	SHT QTY
199	PD25198	CONTROL BD. ASSY (CONT.)					
201	101511	RESISTOR 4.7K 1/2W 5%	R27	2	1		
202	101510	6.8K 1/2W 5%	R28	1	1		
203		S/A R23	R29				
204	101667	220 Ω 1/2W 5%	R30	1	1		
205		S/A R27	R31				
206	101454	2.2K 1/2W 5%	R32	1	1		
208	8A0411	TRANSISTOR PAB3		1	R		
209	8A0420	" "		1	R		
215A		WIRING T101 & L101	PD25190	1	R		
216A		REAR CHASSIS	PD25187	1	R		
217A		FRONT PANEL	PD25204	1	R		
218A		PC BOARD	PD25192	1	R		
219A		HEAT SINK	PD25196	1	R		
220B		" "	PD25202	1	R		
221B		CHASSIS	PD25203	1	R		

REV DESCRIPTION	MODEL	JOB NO.	LOT QTY	LOT NO.	CODE IDENT
					52542
	PLANNER	PREP	DATE	SYSTRON  DONNER CORPORATION	
		CHK'D		SHIPPING ASSY	
	MAT. DUE	APP'D		VPH 24-22 NOV	
	B/U REQ.			DRAWING NO.	
				REV. SIZE	PART NO.
	B/U COMP			- P	1062400
		USED ON	SHEET 7	OF 7	



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